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A Glance at Some European and American Vocational Schools





Designs made by pupils in the Trade School for Girls, Rue du Marais,
Brussels.

A Glance
at
Some European and American
Vocational Schools

FOR

Children from Twelve to Sixteen Years of Age



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A Glance at Some European and American Vocational Schools for Children Between 12 and 16 Years of Age.

The Result of an Investigation of Some Schools in Germany, Belgium, Holland, England, and the United States, Made
by the Consumers' League of Connecticut,
September 1909-February 1910.

The reasons that led to a study of the opportunities for vocational training offered to children from twelve to sixteen years of age are of so great significance and to the general public so little known, that a consideration of them is given first by way of introduction to this paper.

We have regarded our overcrowded high schools and the rapidly growing number of our grammar schools with true American pride in our educational advantages, and have remained in ignorance of the fact that sixty-nine and one-half per cent. of all the children who enter the lower grades of our grammar schools in Connecticut have disappeared by the end of the sixth grade. Where are they? Some have been retarded and may still be found

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in the lower grades from which they will never advance, but the great majority have reached the age of fourteen and have left school from whatever grade they may happen to have reached. It is no exaggeration to say that hordes of children have been leaving school to take up their life work with little or no knowledge of reading and writing and practically none of arithmetic.

The statistics furnished us by the compelling agent who enforces the state child-labor law in the district in which the cities of Hartford and New Britain are located show that 634 out of 1,078 applicants for working certificates from September 1, 1909 to May 1, 1910 were foreign-born. It is these children who are a menace to the integrity of our state, arriving as they do generally with not enough schooling to enable them to enter the grades where they belong by virtue of their years. They are misfits who are a clog upon the classes in which they are placed; they are ashamed of their size and their ignorance, and are eager to leave school. To the needs of these children who form by far the largest proportion of our young workers, our educational system has paid almost no attention. Yet every sentiment of humanity and every reason of expediency should urge us to make special provision for them, born as they are of ignorant and impoverished aliens, yet now the foster children of our state, and soon to become a large part of its governing body.

The large withdrawal of American-born children from the fifth and sixth grades of our schools and the still

larger withdrawal of foreign-born children from school, irrespective of grade, is due in most cases not to the need of increased earnings for the poor family, as many suppose, but in at least eighty per cent. of the cases to the failure of the school to hold the child. The sons and daughters of the ignorant laborer with no tradition of education behind them and with no comprehension of its industrial value, become restless under the book-learning of the school at the age when the rapid development of the powers begins and the period of ripening activity sets in. For most children this is at the age of twelve years.

Probably no period of life is more valuable for educational purposes than the period from twelve to sixteen years; it is the time when the memory is most retentive, the reason becoming vigorous, and the powers of comprehension suddenly illuminated. And no period is in general so worthless for productivity in the industrial world as this. This fact is abundantly proved by the large number of boys of fourteen and fifteen years of age, who float about from one factory to another with long intervening periods of idleness, who cannot hold a position more than a few weeks at most. Seventy per cent. of all the boys who actually get work in our factories is probably a fair estimate to make of these floaters; yet these same boys who tire alike of the drudgery of the school and the monotony of factory life, inattentive students and irresponsible workers, these same boys are not incapable of untiring application where their interests are aroused, and a vent for their superfluous energy supplied

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them. It is at this point that society, powerful and enlightened, should step in, and should assume the responsibility for the proper education of the uninformed and heedless child.

For the ignorant boy of fourteen who leaves school to spend the greater part of his time for the next few years in casual employment, there is but one future possible. He must eventually enter the ranks of the unskilled day-laborer who gets no training in efficiency. A considerable body of statistics is now available to prove that he never develops a high wage-earning capacity. There is for him neither money nor promotion; his wife must face a depressing, life-long struggle; and his children will be deprived of what we in America regard our most sacred right, opportunity. Carefully gathered statistics in the state of Massachusetts report that four out of every five children in that state who leave school at the age of fourteen enter casual or unskilled employment.

It is in the interests of these helpless children of the poor, who will in their turn become the progenitors of another hapless generation, that the Consumers' League of Connecticut has undertaken to stimulate an interest in providing courses in vocational training in our grammar schools.

The aim of this paper is not to discuss systems and details of technical training, — for what they should be is a problem for the schoolmen to solve, — but rather to put into the hands of the general reader a presentation of the problem itself and of the efforts being made in

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some countries to meet it, the scope and present stage of development of these efforts. For in our country it is not the schools that have initiated educational reforms, but the urgent call of the people.

The problem for Connecticut is briefly this:

How shall our school work be so planned that a child may be fitted to enter a trade, commercial life, or domestic employment, his training beginning at the age when tastes begin to differentiate, yet not be deprived before he is fourteen of the possibility of going into and through a secondary school and entering college?

And how may subjects be so chosen and taught in our trade schools that we may graduate men and women not workers only?

GERMANY.

Germany was the first government as a government to appreciate the value of industrial training in the schools to the industrial development of the nation, and to accept the fact that the child who leaves school at fourteen loses much of what he has acquired in the first eight years of school life. To secure to every boy, therefore, a permanent benefit from his early schooling, and to make of him a valuable factor in the achievement of her commercial ambitions, the imperial government of Germany enacted a law that any commune may establish continuation schools (Fortbildungsschulen) and may compel boys between fourteen and eighteen years of age to attend them four or six hours a week at company expense, i. e. with no deduction from their wages. A government bill

is now pending to extend this law to include girls between fourteen and eighteen years of age. The hours are generally given as off-time in the day, because it has been found that boys who do school work at night do not accomplish so much in the factory.

Before entering a continuation school, a boy must have spent eight years in a Volksschule or public grammar school at which the attendance is obligatory. A parent upon entering his child at the Volksschule at the age of six years chooses between the Bezirksschule, at which a very small tuition fee is paid, merely nominal, and the Bürgerschule at which a considerable fee is charged. Although the teachers are the same and the subjects taught are the same, a dividing line is in this way drawn at the very outset between the children of the well-to-do and the children of the poor. It is this class discrimination, however abhorrent it may be to the spirit of American democracy, that renders the question of trade instruction in the schools so simple in Germany. The boy who is placed in the Bürgerschule may after a few years leave this school to enter a higher classical or scientific school which prepares for the University, such as the Gymnasium or Realschule. The boy who completes eight years in the Volksschule and who leaves the public school at the age of fourteen to take up a trade or vocation has open to him a choice among three schools: the Fortbildungsschule which offers a general course for artisans, the Fachschule which offers artisans a special course in a given trade only, and a trade school which

begins at the same place as the Fachschule but carries the boy farther along. Those who leave the trade school may and often do become artisans, but are prepared also to advance higher according to their character and ability. This is the scheme in Saxony, and is similar in the main to that in other German principalities.

THE PRUSSIAN CONTINUATION SCHOOL.

The Prussian continuation schools are all planned after the same model, and a description of one will suffice to give a good idea of all in this kingdom. The following facts are contributed from the continuation school at Charlottenburg, a suburb of Berlin. This school provides a course of six hours a week for three years to boys from fourteen to seventeen years of age. The six hours may be divided between two days or may be placed all in one day, but always include two hours of drawing. In the evening elective courses are offered.

The subjects taught are the same for all boys:

- I bookkeeping, business correspondence, and labor laws.
- II German composition, the exercises relating to the work, as for example the duties of an apprentice.
- III arithmetic, the examples relating to the trades, as for instance the cost of the manufacture of a given machine, the cost to a day-laborer of an illness of a given number of weeks.

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IV technology:

- (a) lighting, heating, the hygiene of the workshop, etc.
- (b) tool and machine study.
- (c) the study of materials, their origin, cost, etc.

V citizenship.

VI drawing, specialized trade drawing from the start.

When more time is possible, practical work in a school workshop is given. The school workshop is to be preferred to a factory workshop because the manufacturer uses the machine only and naturally thinks of his product and not the boy. In the school workshop, handwork only is required of the boy for some months before he is taught the use of machinery, on the principle that only by doing handwork does one come to appreciate the value and possibilities of the machine. The factory gives a one-sided training only, whereas the school should give the boy a glance over the whole subject with which he is dealing. For example, to a boy who expects to set panes of glass, some knowledge of artistic glass work should be given, a study of color and composition and the history of stained glass windows.

The principle underlying the Prussian continuation school system is a twofold one and may be expressed in the two words, Kenntniss and Specializirung, understanding and specialization.

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SAXONY.

Many principalities have enacted more stringent compulsory education laws for minors over fourteen years of age than the Empire. In Saxony, where industrial education has reached a remarkable development, the law requires that all boys between fourteen and seventeen years of age who are at work shall attend school eight hours a week in a continuation school, four out of the eight hours being given up to drawing.

A brief description of the trade schools of Dresden for such boys will give an idea of the extent of the development of industrial training in Saxony. These schools include city trade schools for boys and for girls (*Städtische-Gewerbeschulen*); guild schools (*Innungsschulen*) for barbers and friseurs, carpenters, bookbinders, butchers, cooks, tinkers, and shoemakers; compulsory guild schools (*Zwang^s-Innungsschulen*) for bookbinders, painters, confectioners and pastry cooks, chimney sweeps, blacksmiths, upholsterers, joiners; association schools (*Vereinschulen*) for hotel boys, druggists, typewriters, horticulturists, etc.; commercial schools; music, singing, and theater schools; art schools for photographers, decorators, etc.; schools of housekeeping; schools for tailors, dressmakers, and seamstresses.

The city trade school for boys (a *Fach- und Fortbildungsschule*) gives instruction from 8 a. m. to 2 p. m. six days in the week, and assigns home work so that pupils cannot work in the factories at the same time. A boy who attends this school for a full year need not there-

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after attend a continuation school, since thirty-six hours a week of instruction for a year is more than an equivalent for eight hours a week for three years. Almost no shopwork is given here; the boys have already had practice in simple handwork in a carefully graded course in the *Volkschule*, and it is thought more profitable that they should give much time to drawing and to the study of subjects relating to the trades, such as mathematics, bookkeeping, labor laws, shop and personal hygiene, etc. In the day school, those who take kindred subjects are grouped together in classes:

- (a) bakers, butchers, waiters, cooks, etc.
- (b) carpenters, joiners, masons, tinkers, etc.
- (c) machinists, mechanics, locksmiths, etc.

The requirements for admission to the day school are the completion of eight years in the *Volkschule*, a knowledge of what is taught in the middle grades of the *Volkschule*, and good moral character. In the evening and Sunday school, advanced work is given in mathematics, language, the sciences of physics and chemistry, and drawing both free-hand and mechanical.

A guild school (*Innungsschule*) is a kind of co-operative school in which the employers are interested. The boys who attend a guild school are exempt from attendance at a continuation school. Through the courtesy of the directors an interesting study was made of a number of these schools.

The school for chimney-sweeps in Dresden is a compulsory guild school (Zwangs-Innungsschule) for the reason that there are only thirty master-sweeps in the city. A Zwangsinnung may be formed when enough employers desire it and yet when at the same time there is need of the help of all the employers to pay the expense of running the school. When an Innung is very large, it is not usually compulsory. All the master-sweeps in the city are compelled to belong to this Innung.

Those who sleep during the most exhilarating hours of the day know little of the fascinations of the life of the chimney-sweep. Up early in the morning and above the city when the rest are asleep, he is through at noon and dressed up clean with a holiday for the rest of the day. He has work all the year around; he is used to all weathers and never has colds. There are not many accidents and master-sweeps get good pay, four or five thousand marks a year. Sweeps are given a course in ethics, because, working as they do entirely without supervision, nobody ever knowing whether their work is well done or not, they need to develop a sense of responsibility and to be taught the value of faithful service for its own sake. Their vocational instruction includes a little of physics and chemistry, a study of heat and the heat values of different fuels, of gas, smoke, soot, draughts, and the effect upon the draught of the different heights of a chimney, kinds of chimneys and stoves, the effect of winds and moisture, the need of air and the effect of too little or too much, the use of the first air (to burn up the gas),

and of the second air (which must be regulated and passed through the right place). The lessons are illustrated by a large number of models of houses, factory chimneys, etc.

The school for butcher boys in Dresden (an *Innungsschule*), is entirely supported by an association of butchers. Those butchers who do not belong to the *Innung* must permit their boys to go to the continuation school. The school session is from 2 to 6 p. m. once a week, 40 weeks in the year, for three years. Boys in this trade are excused from the four hours of drawing a week which is required in the continuation school. There are one hundred and fifty boys in this school, and four teachers are regularly employed besides the director and a physician who gives an occasional lecture.

The boys learn a great number of things under the head of geography and composition: the coinage of all countries and rates of exchange, tariff laws, pure food laws, how to sterilize milk and meat, what diseases render animals unfit for food, what use may be made of a tuberculous cow (it may be sent to the oil factories), the use and commercial value of all parts of the animal (e. g. a thorough study is made of all kinds of leather), the marks of age in an animal, the proper ingredients of sausages and the adulterants forbidden by law. A powerful microscope is owned and used by the school, but bacteriology is not studied since no science is taught.

A few of the class questions will give an idea of the character of the instruction which is always practical:

How many swine in Germany?

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What are the characteristics of the German swine?

What are the characteristics of other swine?

In what principality were English swine first introduced?

Why?

How many sheep in Germany?

From where are they imported?

In the teaching of arithmetic and bookkeeping, the school is helped by the co-operation of the employers. Each boy reports every week the number of swine, sheep, etc., purchased by the firm for which he works, what was paid for each consignment, etc. The trade instruction is divided into four parts:

- (1) practice with slaughtering apparatus upon wooden models,
- (2) slaughtering of swine,
- (3) instruction in the first care of the wounded,
- (4) excursions to slaughter-houses,
cowmarkets,
waterworks,
veterinary establishments,
blood-utilization establishments,
milk-sterilization establishments.

An interesting example of a Vereinschule is the school for hotel boys in Dresden, which has two sessions a week, Mondays and Fridays from 3.30 to 6.30 p. m. All of the boys in this school learn French and English,

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business composition, round handwriting, bookkeeping for restaurants and hotels, calculations in the coinage of all nations, rates of exchange, the use of checks and drafts, a little of political economy and law. In addition the boys are divided into two classes of cooks and waiters, the cooks to be taught a knowledge of all kinds of fish and meat, and the waiters of all kinds of liquors.

A few questions asked in a class of waiters when beer was under discussion will again give an idea of the practical nature of the instruction:

Where in Germany are the headquarters of the manufacture of beer?

What cities in Bavaria have extensive breweries?

Where is the largest brewery in the world?

What are the component parts of beer?

What is done first with the barley?

Why is it carefully sorted?

What would be the effect upon the beer if unripe kernels were used? If imperfect ones were used?

What is done next?

What would be the effect if the grains were not washed clean?

What is the necessary temperature for brewing?

What method of heating is necessary?

Why cannot a fire underneath the vat be used?

and so on through the whole process of manufacture, the reasons for the use of sugar and malt, and the necessity for killing the germ. The interest of the boys in the

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study of this subject was quite marked. Practice in cooking is not given here, because there is in Dresden a cooking school for men.

One cannot but admire the spirit of the employers of Dresden, who have voluntarily formed themselves into guilds and associations to contribute to the special instruction of apprentices who in the majority of cases do not remain in their employ, but go to all parts of Germany and even to foreign countries. When inquiry was repeatedly made into their main motive, the reply was "to raise the standing of the calling." Moreover, these guild schools give the employers a chance to interest themselves in the choice of teachers and the trade instruction of their apprentices without seeming to interfere with the work of the schoolmen, who may in many cases not understand the needs of their apprentices so well as they do themselves.

This co-operation of employers appeared very marked in the guild school for bookbinders. In connection with this school it is interesting to note that, although there are many applicants for admission, only the best are admitted for the reason that those who have no special aptitude for the work, no appreciation of color and design, are sure to fail and must eventually take up some other subject.

BAVARIA.

The Bavarian system of industrial training has been given its present form by Dr. George Kerschensteiner

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of Munich, the most widely recognized authority on industrial education to-day, who holds the position of Schulrat and royal Schulkommissär in Bavaria. Although in all essential points, the school systems in the different principalities are agreed, there are certain peculiarities in the Bavarian system which it is interesting to note by way of comparison.

In the Prussian type of continuation school, confined as it is to six hours of instruction a week, no place is given to shopwork. But nearly every continuation school in Munich combines with study handwork also in a school workshop (*Fachliche Fortbildungsschulen*.) The value of the school workshop is placed high, on the ground that boys who work only in a factory workshop do not see so clearly the relation of their study in the school to their work in the factory, are more or less indifferent to study, and do not get the full benefit of their schooling.

The law in Bavaria does not fix the number of hours of attendance upon the school, but the Schulrat has been permitted to determine the number of hours in the different schools by the necessities of the different trades. As might be expected, there is more elasticity in the arrangement and required number of hours. Apprentices in some trades must attend school nine hours a week, ten months in the year, for four years; that is, up to the eighteenth birthday, full advantage being taken of the law of the Empire as to the maximum age for compulsory attendance. In some other trades, only

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three years of school attendance is required of the boys, and the number of hours per week varies from four to thirteen.

The main motive which makes itself felt through Kerschensteiner's whole plan of industrial education is to teach the boy to understand his subject, to understand the materials and objects with which he is dealing. Kennen-lernen, the illumination of the understanding, is the magic key which will open the door to individual efficiency and to national growth. The writer begs leave to digress a moment here to compare what seems to be our American motive in education with this German motive. For it may be that in the midst of our national rush and competition, out of the very exigencies of our situation, we have laid hold upon a more forceful though not more noble motive. It is to teach our children to think for themselves, the girl as well as the boy, the child in the lower grades as well as the college student. By the combination of these two motives, Kennen-lernen, the illumination of the understanding through knowledge, and Denken-lernen, the power of independent thought, the true aim of all education will surely some time be reached.

To resume our subject, in the city of Munich fifty-six trades are taught in Fachliche Fortbildungsschulen, and there are also in the city thirteen Bezirksfortbildungsschulen, or continuation schools, for those who have completed eight years in the Bezirksschule, and who do not wish instruction in a special trade or are specially ex-

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cused from attendance upon the Fachliche Fortbildungsschulen. Instruction in these schools covers two years with eight hours a week of schooling. The subjects taught are:

Religion,
Reading and composition,
Arithmetic (accounts),
Hygiene and citizenship,
Handwork in wood and iron, with drawing,
Gymnastics and swimming.

VOCATIONAL TRAINING FOR GIRLS.

Although, as has been said, attendance upon school is not yet compulsory for girls after the age of fourteen years in Germany, nevertheless many trade schools have been established for them.

In arranging the course of study in the schools for girls in Munich, the same principle of Kennen-lernen is applied, the learning to understand the object with which one is dealing. Since nearly all girls from the poorer classes marry after a few years of industrial or commercial work, and since from this class comes our largest and most steady increase in population, it is the opinion that a trade school for girls, although its professed aim may be to train for special lucrative employments, should nevertheless not lose sight of the fact that the special field of activity for the girl for by far the longest period of her life will be in the home. The priceless object with

which the woman deals is the baby, and Kerschensteiner's scheme makes compulsory a course in maternal pedagogy, which should, he believes, be a part of every woman's training for life, whether she is to be a working woman or a social leader. It is believed that such training will awaken dormant sympathies in girls, will develop a natural instinct in a healthful way, and tend to incline their tastes away from industrial life and toward domestic life. For we must regard it as a calamity if our young girls are going into our factories faster than is necessary, to the possible detriment of their health and the health of their posterity.

The teaching of maternal pedagogy includes instruction as to the toilet and diet of the baby, preventives of disease, care of the child when going through the children's diseases, and child nurture in general. An illustration of work in a class composed mostly of peasant girls of various ages up to eighteen will illustrate the strictly scientific though elementary nature of the instruction given. The recitation opened with rapid questioning upon the toilet of the baby:

Why does the baby need warm clothing at birth?

Why is woolen warmer than cotton?

Why does it need soft clothing?

Several members of the class were sent to the blackboard to demonstrate by free-hand drawing that they could cut the various articles of a baby's toilet, drawing

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each article the ordinary size for a new-born baby, and making the proper curves for neck and sleeves.

Why does a baby need to be fed every two hours?

Why is cleanliness a preventive of disease?

Why is repose a preventive of disease?

What is the value of repose in the open air as compared with repose indoors?

Instruction in the trade school for girls in Munich is given in every kind of woman's work, hand and machine sewing, embroidery, lace-making, etc. Most of the girls who attend expect to marry, and are not preparing themselves to earn a living. A noticeable feature of the school is its normal department, for the continual training of teachers is an imperative necessity in this work. A continuation school is associated with it where Wednesday and Saturday afternoons girls from thirteen to sixteen years of age receive instruction. Girls who attend this school are excused from attendance upon the Sunday School where otherwise the law in Munich requires them to study.

The idea seems general in Germany that in the training of the young something besides technical efficiency should be aimed at. A school which has from the outset held this aim steadily before it is the Victoria Continuation School in Berlin. Its teachers are trained to inculcate some moral lesson in every recitation, no matter what the subject is, and the success with which it is done is wonderful. To give one illustration from a lesson in commercial correspondence: it was shown the girls

how easy it is for misunderstandings to arise, in just what ways they may come about, the obstacles and special difficulties in the way of coming to an agreement. What is necessary in order to understand another's point of view? Goodwill; and much may be accomplished by courteous language. Therefore a kindly spirit is inculcated and courteous phrases are taught.

The school was founded in 1878, and is supported by a charitable association. It offers to girls from poor homes a course of three half years which they must agree to complete when they enter. Since attendance is not compulsory, and parents were not at first used to the idea of so much schooling for their daughters, but few pupils came when the school opened and its growth was slow. It numbers now about 600 pupils. It comprises a commercial school and a school of millinery, of dress-making, and of lingerie (the making of underwear). Frau Henschke, its founder, always bore in mind that most of the girls would become wives and mothers; she encouraged all to pay some attention to housewifery, and made a little instruction possible for all in cooking and sewing, though not all take it. It is the opinion of the present director that, if possible, a law should be enacted to require every girl between fourteen and sixteen or seventeen years of age to take at least two hours of work a day in a continuation school.

The Victoria School has won an assured place for itself in the public esteem, and has many imitators in Prussia.

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Since Berlin is so large a metropolis, resembling New York in the rush of life and business, it does not surprise an investigator to find here as in New York great pressure brought to bear by parents to introduce their children into wage-earning occupations as early as possible. It is in consequence of the strength of this pressure that the Victoria School, which is for the poorest classes, attempts to hold the majority of its girls only a year and a half, and that the best equipped trade school for girls in Germany, the school in Potsdam, adapts its instruction to a one year's course for girls who must go to work.

The trade school in Potsdam provides instruction in four distinct departments:

- (1) a school of housekeeping,
- (2) a trade school in which courses are offered in washing and ironing, cooking and baking, simple hand-sewing and machine-sewing, the making of underwear (lingerie), dressmaking, millinery, artistic handwork, drawing and painting,
- (3) a commercial school,
- (4) a normal school.

Some methods in this school are very American; for example, the girls do not practise their stitches on samplers as in so many continental schools, but on the garments themselves which they begin by making as in the trade schools of New York and Boston. They have

learned simple sewing already in the *Volkschule*. The aim seems not to be perfection in workmanship, but the best that may be acquired along with facility in a given short period of instruction and practice. To the superficial observer, the normal school which is a regular feature of the continental trade school for girls is the most interesting department to visit because of the more scientific character of its work. Girls must be eighteen years of age to enter the normal school, and are already more or less proficient in hand work. A unique feature of this school is the large collection of models for the department of sewing and dressmaking to illustrate the whole process of spinning and weaving in cotton, flax, silk, and wool, and a second collection of natural objects to illustrate the process of preparing the raw material for manufacture from the cocoon and cotton plant to the skeins of silk as they are imported from Japan and the imported cotton from our Southern States. Still a third collection of models in wood silvered over reproduces every part of a sewing machine, the smaller pieces many times enlarged, for the use of the teacher in showing the girls how to operate and take care of the machine. Similarly in the normal class of housekeeping lectures illustrated from a collection in the school are given on all kinds of materials; for example, on wood, the different kinds, native country, characteristics, value, uses, etc.; on glass, its history, process of manufacture, uses, etc.; on pepper, tea, coffee, etc., the whole history of production, preparation, adulteration, etc. As in our train-

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ing schools, the students in the normal classes are given practice in teaching by conducting recitations in the elementary work of the one year pupils in the trade school.

BELGIUM.

In passing from Germany to Belgium, one steps into an environment as different as the languages of the two peoples. Belgium is a very industrial country, honey-combed with mines and dotted over with manufacturing towns. Its enterprise may be measured by the perfection of its railway service. From Brussels to Antwerp block trains run every hour and accommodation trains between, the service resembling that between New York and Philadelphia, and to every part of Belgium there are convenient trains for the business man from Brussels morning, noon, and night.

From its highly industrial character one might expect to find here as in Germany a general and marked development along the lines of industrial training in its educational system. Yet it is surprising to discover in a country which is not so large in area as the two small states of Massachusetts and Connecticut combined over six hundred vocational schools, all well attended and over half of them schools of trade and housekeeping for girls. There is no compulsory education law in Belgium, although throughout the kingdom school privileges are provided children up to the age of twelve years, and attendance upon the trade schools is voluntary. Although

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most of them are supported by state and city, a small tuition fee is regularly charged, and perhaps partly in consequence of this practice the children in the day trade schools are not in general from the poorest classes.

The Belgians are an artistic people, and their national characteristic expresses itself most naturally and unconsciously in their schools. Beauty of workmanship is their ideal and perfection is their standard of work. The patience and enthusiasm with which they strive for their ideal leads them into certain definite methods of work and school organization. The course of study is nearly always from three to five years long with both morning and afternoon sessions in the day schools, and instruction in academic and industrial work is given, the two being closely correlated. Since schooling is not compulsory, only the better part of the applicants are admitted to many schools. As might be expected hand rather than machine work plays the leading rôle, and excellence in the artistic trades is most marked.

To most of the trade schools, children are not admitted under the age of fourteen years, and in the schools for girls in Brussels which do admit them younger scarcely any are seen. Their absence is explained on the ground that they do not progress rapidly and are therefore not encouraged to come. A certain degree of maturity of judgment is undoubtedly necessary for progress in most trades. Yet what a child of thirteen years can do under proper instruction and under the stimulus of a high national ideal is well illustrated in the admirable school

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for boys, called L'École Professionnelle d'Armurerie et de Petite Mécanique in Liège. The city of Liège has for centuries been famous for the superior excellence and beauty of workmanship of its arms, and the boys in this school, all of whom are small, many thirteen years old and some only twelve, produce results which can hardly be surpassed by an adult. Their hours are from eight to twelve in the morning and from half-past one to five in the afternoon, six hours a week being spent upon drawing. Iron is, of course, a soft metal, and its manipulation is not beyond the muscular power of a young boy. The first bit of work required of the boy is to make a piece of rough iron into a parallelopiped of absolutely exact measurement and then to give it a high polish. In his work the boy is not thinking of economy of time or of the commercial value of a highly polished instrument, but rather of exactness and beauty, and a kind of pleasure in work and absence of hurry seemed to pervade the activity of the workroom.

Here as in all the Flemish schools both in Belgium and Holland great emphasis is laid upon drawing, and the rule is strictly adhered to that every object shall be constructed after a drawing with given measurements and not after a model. Many hours are spent upon the drawing of a single object, and usually three or four drawings are made, of the face, back, a section, and sometimes the profile. The drawing of the object which the boy is constructing is almost invariably pinned up in full view of his eyes at his place in the workshop or, if

not in plain sight, will be pulled out of a drawer and displayed at request.

In the gun-room of the school of armory in Liège, small boys make rifle stocks whose parts fit together with such exactness that the line of separation is hardly visible. In another school in Liège, numbering over six hundred pupils, in which pattern-making is taught, iron work and blacksmithing, the making of tools and constructing of machines, of cycles and automobiles, work of a high grade is done by boys all of whom are small and seem young. The same thing is true elsewhere in Belgium, from which one may reasonably conclude that the age at which a boy may begin apprenticeship work in the trades should be determined not by his mental development but by his physical development.

Although in some of the Flemish schools, there seems to be a lack of any philanthropic spirit, the art and not the girl or the industry and not the boy being uppermost in the minds of the teachers, still in some schools, whose character is determined perhaps mainly by the director, the motive is strongly philanthropic. Among these may be mentioned an excellent school in Ghent for the children of the poor, where a small tuition fee is nominally charged, but in many cases quietly remitted. In this school, which numbers about two hundred pupils, quite elementary subjects are taught; such as, brick-laying, sign-painting, house-painting, as well as also plumbing and work in iron and wood. Here too the same high standard of excellence may be observed which

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is so marked in the Belgian schools. The power machine, delicately adjusted and exquisitely finished, was constructed entirely by these boys who are training to be simple artisans.

Another school in which a kindly feeling to the children of the poor is evident is the school of joinery and iron-work in the small city of Morlanwelz, which is in the heart of the coal-mining district of Belgium. Boys are admitted here from the ages of thirteen to sixteen years, and some exceptions are made in the case of those even younger who have completed the primary school. It is thought wrong to reject from a trade school children who have no aptitude for study or who are suffering from natural disadvantages, from slowness, dullness, etc. Therefore all such are welcomed here. When this school was organized in 1901, there was much discussion whether machinery should be installed and used or not, with the final decision that it was too expensive. The wisdom of this decision is maintained on the ground that what is especially deplored in our working-men is the lack of dexterity and professional knowledge, and that the apprentice does not get the basis of either in the use of machinery. Therefore the boys are taught the use of ordinary tools and precautions in their use, and how to sharpen them and keep them in good order.

In contradistinction with this position on the vexed question of the use of machinery in an apprenticeship school stands the great industrial school for men and boys at Charleroi. Over 1,000 pupils are in attendance at this

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school, drawn partly from surrounding factory towns, since Charleroi is a city of less than 50,000 inhabitants. The actual conditions of the factory workshop are reproduced here. Men and boys work on the group or gang system, thereby learning co-operation and also adjustment to factory conditions, and are put at once upon the use of machinery. The machine is a fact and cannot be ignored. The object of the apprenticeship of the future is not to teach manual dexterity, but rather insight into one's work, grasp, how to use a tool or machine so as to get the maximum product with the minimum amount of expended energy. The daily use of a machine or tool does not give this facility, as some may suppose. To offer a very simple illustration: one workman may accomplish what he wishes with a single stroke of the file, whereas another doing the same work may waste several strokes because he is afraid that he will press down too hard or drive the file too far. His productive power and wage-earning capacity are lessened by his timidity. Not a third of our machines are worked up to their full capacity. Even admitting that the personal equation can never be wholly eliminated and that a sentiment exists on the part of some workmen not to produce above a certain amount in a given time lest the standard of wages be lowered, even so it remains true that a great number of industrious and conscientious men are handicapped for life by lack of mechanical training.

The training at the school in Charleroi is very broad as everywhere in Belgium. Courses are provided in three

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departments, the day, evening, and Sunday schools, and include instruction in every trade and every subject bearing upon the trades from bricklaying and sign-painting to advanced laboratory work in which individual experiments are performed by the student under the supervision of the instructor.

One of the best equipped and largest trade schools in Belgium is the industrial school at Antwerp, which was founded in 1860 and has been supported by the province and the state since 1866. The school is attended by 1,380 pupils, and is soon to enlarge its accommodations and equipment. It is an evening school; the requirements for admission are the age of fourteen years and a perfect knowledge of the four rules of arithmetic; and the course is five years long with seven months a year, the first three years being given up to drawing, mathematics, and bookkeeping mainly, and the other two to special subjects such as mechanics and woodwork, still an extra year being required of those who take plumbing, silver-smithing, electricity, chemistry, etc. The drawing is done the first year entirely from models, thereafter sometimes from memory, and the drawings are sent down to the workshops and objects made from them without the models being seen. The school possesses a remarkable collection of instruments and apparatus for use in the lecture room.

To visit a drawing class of from one to two hundred men, all with the rough exterior of daily laborers, to see them absorbed in their difficult tasks, to note the tidiness

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of their work and the clean atmosphere of the well-filled room, impresses the visitor with the need of such schools in every city for its working-men, who have learned from hard experience to appreciate the value of training and to regret the restricted opportunities of their youth.

GIRLS IN THE FLEMISH SCHOOLS AND THE ARTISTIC TRADES.

The schools for girls in Belgium, although very numerous, are of no great variety. They are schools of trade and housekeeping in which the trades are emphasized, or schools of housekeeping and trade in which housewifery is emphasized, or schools of housekeeping only. The Flemish people never lose sight of the fact that the girl is the maker and keeper of the home, and some knowledge of the three essentials of housewifery, cooking, sewing, and laundering is made possible in every trade school for girls and compulsory in many.

Since the course for a diploma is always three years long with sometimes a fourth or fifth year offered in special subjects, it is possible to plan a comprehensive and well-correlated scheme of work, — and indeed this is a universal characteristic of the Flemish schools. At the same time it is the custom to provide for those who are unable to complete such a program special courses designed to meet the special needs of various classes of workers.

In no school is this generosity of plan more evident than in the school for housekeeping in Amsterdam called

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De Nieuwe Huishoudschool te Amsterdam. This school offers seven diploma courses of which three are normal courses of three years each to prepare girls to become teachers of cooking, of household science, and of laundering (*de behandeling der wasch*); a fourth is a short course in the same three subjects, open only to those who are already teaching; and three courses two years long are provided, one open to girls of seventeen for training in housewifery, one open to girls of fifteen for training as mothers' helpers, and one open to girls of twelve or thirteen who are going into domestic service. The instruction in all of these courses aims to be scientific as well as practical, the chemistry of the foods being taught and the hygiene of body, house, food, and clothing, and not only the washing and cleansing of all kinds of materials and the removing of spots and stains, but also the chemistry of the dyes, the mixing of colors, and the dyeing of faded garments.

Besides the seven diploma courses, there is a general course not leading to a diploma in which are taught sewing, patching, fine mending and darning, the cleansing of furniture, laundering, the personal budget, the household budget, system, nursing, etc. This is an excellent type of a school of housekeeping. The thoroughness of its work may be illustrated very simply by its method of teaching patching: a sampler is made, composed of nine squares of white cloth of different qualities from heavy cotton cloth to the finest batiste, and a round patch put in the middle of each.

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In the industrial school for girls in Rotterdam (*Industrieschool voor Meisjes*) the children have two hours practice a week in patching and mending clothes brought from home. This school may be mentioned together with the industrial school for girls in Antwerp because of a certain resemblance in the teaching of study subjects and in the division of work. In both schools much time is given to the teaching of Dutch, French, history, geography, arithmetic, bookkeeping, geometry, fine penmanship, drawing, and elementary sciences. In Antwerp, the entire morning session is given up to studies, and the afternoon session to handwork in eight different trades: in dressmaking, lingerie, millinery, the making of artificial flowers, of corsets and skirts, industrial drawing, drawing from nature, and commerce; the study courses run through five years and are obligatory the first two, including in the fourth and fifth year, a very complete lecture course in practical ethics, one's duty to one's self, one's family, one's country, mankind, *savoir-vivre*, and the aim and importance of education. Girls are admitted to the school in Rotterdam at the age of thirteen and in Antwerp at the age of twelve.

Two sister schools in Brussels stand almost unrivalled in certain lines of industrial work: the so-called *Bischoffsheim* school, founded in 1865, in which the emphasis is placed on the artistic trades, and the school of trade and housekeeping, called the *École Couvreur*, founded in 1888. In the latter school four classes of students are recognized: those taking the full course for the diploma,

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daughters of the well-to-do (*des grandes familles*) for special courses, servants of the well-to-do for special courses, and affianced brides. The school is divided into two sections, a lower course of three years to which girls are admitted at the age of twelve years, and which is preparatory to the upper school or second section, which offers special training in dressmaking, lingerie, millinery, and commerce, and leads to the diploma. The lower school also provides definite training in preparation for the duties of wifehood and motherhood. The course in domestic economy has been developed into a well-rounded education in housewifery. In the practical work of the kitchen each girl learns to prepare a fixed number of dinners, each with a different soup, *entrée* (*hors-d'oeuvre*), meat, vegetables, and dessert; to prepare special dishes such as salads, pickles, jellies, and dishes for the sick at special places in the course; to understand the cost of foods and the economy of waste material; to draw the parts of animals as displayed in the markets and to practise purchasing in the markets. The laboratory method is not in use here, but the girls work in small classes around a large cooking-stove, the actual conditions of the ordinary kitchen being reproduced. Lectures on alimentation, hygiene, and maternal pedagogy, accompany the use of a text-book on hygiene and domestic pharmacy, which covers the study of diseases, statistics, bacteriology, poisons, antiseptics, etc. The lectures do not give, as might be supposed, a merely elementary treatment of the subjects involved; on the contrary, the treatment is de-

tailed. One illustration of its character may be suggestive of the whole: not only are the chemical components of the body given and the chemical constituents of many foods, such as milk, fat, etc., but each step in the process of digestion is explained by which the mineral matter from the milk, for example, enters into the tissues of the body which require it.

The Bischoffsheim school was the first trade school established for girls in Europe. Its main work is the teaching of the artistic trades, and much time is given to drawing and painting. Girls are admitted as young as twelve years of age, though but few of this age are found in the school. The making of artificial flowers has become a fine art in the Bischoffsheim school. The equipment for the work is so simple that it would be easy to introduce this industry for girls into our own cities. The whole outfit occupies one medium-sized light room, and consists of several long, plain wooden tables, two alcohol lamps at a table where the girls sit at work, a glue pot and a few small tools for each girl, fresh flowers in vases for models, and the materials out of which the flowers are constructed, white silk of good quality, specially prepared elsewhere and purchased in sheets, cotton cloth, cotton batting, paper, and wire, and on the walls a cabinet of aniline dyes. A drawing is first made of the flower and of each part of the flower and colored in exact tints, and from the drawing the artificial flower is constructed. Each girl learns how to mix the dyes so as to produce all kinds of neutral tints, and keeps a book of drawings

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and a note-book in which the method of making each flower is written down in detail. The flowers are sold to the stores, each girl receiving what is paid for her work. A two years' course in drawing is one of the requirements for admission to this work.

The best opportunity for the investigation of the teaching of sewing chanced to be given the writer in the trade school in the Rue du Poignon, Brussels, which is so remarkable for its system, thoroughness, and the perfection and beauty of workmanship attained that the subject will be treated with considerable detail here in the hope that it may prove suggestive and helpful to teachers of sewing in our country. It ought to be said first that the learning of stitches and simple sewing is compulsory in the Belgian as well as the German grammar schools, so that the girl on entering from the grammar school is not a novice though by no means expert.

In each department, the course begins with the most elementary work and advances step by step as perfection is acquired. For example, in the making of underwear, in the first year perfection is acquired in all kinds of stitches on many kinds of material; in the second year patterns are made from drawings constructed from measures given by the teacher, and miniature garments are made; in the third and fourth years the girls take measures themselves, and cut, make, and embroider the underwear. In the department of dressmaking, stitches, seaming, tucking, plaiting, etc., are first practiced with silk and cotton thread on all kinds of dress material; simple

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articles are next made such as petticoats; and in the third and fourth years the cutting and making of clothes for children and women, the making of forms and of dolls' clothes. In the department of embroidery, embroidery stitches are first learned on thick white cotton material, and later practiced on fine material; fine linen is then given the girls which they make into hemstitched handkerchiefs with a little fine drawn work, embroidered first with dots in simple patterns, next with eyelets and dots, then with beautifully worked initials in the corners, and lastly with original designs worked in the corners. The work orate and beautiful designs in birds, flowers, griffins, etc. being made for all kinds of household furnishings, such as curtains, portières, pillows, and for a great variety of articles for women's use, such as silk fans spangled and embroidered in delicate colors.

The same general plan is followed in the teaching of drawing and designing. All pupils take the same preparatory work for two years, and then differentiate. Those studying dressmaking, for example, learn to draw gowns from memory and reproduce them in miniature and to draw and color gowns to illustrate the history of costuming. Exquisite drawings of the gowns of the times of Louis XVI are displayed. The general course is characterized by the same patient advance. It begins with the free-hand drawing of straight lines, perpendicular, horizontal and oblique, and the study of line proportion, of angles — the themes being taken from handkerchiefs folded and draped, from Egyptian patterns,

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etc. — of curves, of primary and secondary colors, and neutral tints, of color composition, of the drawing of leaves from nature, — the dominant color in a great variety being exactly reproduced to teach the eye color discrimination, and also all the various tints in single leaves being carefully discerned and blocked out, — of the drawing of flowers, and finally the subject of designing in form and color composition is taken up.

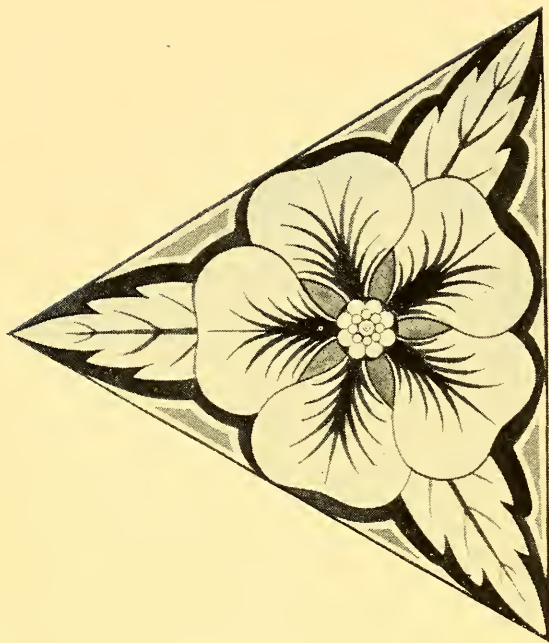
The above outline of work does not profess to be complete. It is only hoped by these incomplete illustrations to give some idea of how in the Belgian schools highly artistic and perfect workmanship is actually attained through a slow and painstaking progress from the most elementary beginnings.

THE TEACHING OF DESIGNING.

The method of teaching designing for the artistic trades is the same throughout the Flemish trade schools. It is based on the use of nature motives, the analysis, conventionalizing, and new combination of the parts and colors of natural objects. Designing from geometrical motives, i. e. original groupings of circles, curves, dots, diamonds, drops, angles, and the like into patterns that may be used in the manufacture of wall papers, dress goods, house decorations and novelties of all kinds, this method of designing is regarded as elementary and is taught in the lower schools.

The Flemish method may be explained by the accompanying reproductions of practice pieces done by girls in

PLATE I



A first lesson in designing from a nature motive Trade School for Girls, Rotterdam.

the industrial school at Rotterdam. Plate No. 1 gives a first lesson in designing from the use of a nature motive. A sprig of leaves with a blossom was given the student to be drawn and colored. The general outline was observed to be that of an irregular triangle, and the student was directed to draw an equilateral triangle. This was the first step in conventionalization. The blossom which was toward the middle of the sprig was placed in the exact middle of the triangle, and itself conventionalized. Since there was a leaf in each corner of the sprig, one was put in each angle of the triangle, all three being made exactly alike in shape and size. Four colors were finally selected from the leaves and blossom of the sprig and introduced into the design in an entirely new arrangement. The result arrived at was a design in which everything was suggested by the natural object, and yet nothing in the one was like anything in the other. Leaves, flowers, shells, butterflies, spiders' webs, feathers, were some of the objects used for practice work in the schools. Even the human figure was found conventionalized and worked into a very original and artistic design border in a school of bookbinding in the Rue du Prèsident in Brussels.

This method may be subjected to abuse and misuse. It is quite as possible to make unattractive designs from nature motives as from geometrical motives, and indeed the skill which comes from careful and complete training is so necessary to the success of the method that it is probably better not to attempt it at all unless much time can be given to it.

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The question naturally arises whether it is possible to cultivate the taste of a nation. The German educators are quite aware of the lack of taste which is a defect of their people, and with characteristic thoroughness and hopefulness are making a study of the problem how to elevate the taste of their nation by education. Wider and wider in the *Bezirksschulen* are the doors being opened to the study of drawing, not so much that drawing may be learned as that taste may be developed. It is believed that children take more note of small objects than of large ones, and on this principle many school buildings in Germany are now being built in a simple style, every effort being made to make the entrance or some other small but conspicuous part beautiful in the hope that the child will notice and appreciate it. Children may be taught to be attentive to construction and color composition in decoration and to try to imitate it, and may learn to observe what is tasteless in architecture and other arts. For this purpose art collections are valuable and fine pictures in schoolrooms. It should be remembered, however, that a picture has little or no educative value to the child if its beauties are not explained to him.

SCHOOLS OF THE FOURTH GRADE IN BELGIUM.

Since instruction in the elementary schools in Belgium is provided children only up to the age of twelve years and since most of the trade schools do not admit children under fourteen years of age, there is a hiatus in the

PLATE II



A second lesson in designing from a flower motive. Trade School for Girls, Rotterdam.

SOME FLEMISH SCHOOLS

school life of a child that needs to be bridged over. Quite recently efforts have been made to meet this need in Brussels and some other Belgian cities by the establishment of schools of the fourth grade (*Écoles du Quatrième Degré*) so-called because the elementary schools are divided into three grades, primary, intermediate, and upper. One of the best types of such a school for boys is *L'École Primaire Supérieure Technique* in the *Rue de la Chapelle*, Brussels. The school is preparatory to a trade school, and the course is so arranged as to give a boy a glance over several kinds of industries in order to help him to a choice when he enters a trade school or factory life, but does not aim to teach him any fixed trade, simply to provide *une méthode active d'éducation générale*.

The school is so unique that its division of subjects and time are given here:

First year:

Physical exercises (including gymnastics, sports, under the direction of a teacher, swimming, with hygienic precautions to take, and remedies to use in case of accident)

	10 hrs. 40 min. a week.
Industrial training	12 " " "
Scientific "	10 " " "
Artistic and literary	9 " 20 " " "

total	42
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Second year:

Physical exercises	10 hrs.	40 min.	2 weeks.
Industrial training	13 "	20 "	" "
Scientific "	9 "	20 "	" "
Artistic and literary	8 "	40 "	" "

total

42

From time to time instruction in morals is given by means of talks. Drawing occupies four hours a week throughout the course. A peculiarity of this school is that parallel work in three kinds of industries is carried on in each class each week in the year. For example, in the second year training in woodwork occupies four periods, in clay modeling two, and in ironwork six.

In a school of the same grade for girls in the Rue Blaes in Brussels, the industrial work is arranged on the same principle. Parallel instruction is given in two trades, in dressmaking and the making of underwear. The hours in the girls' school number thirty-three a week, of which fifteen are spent on industrial work and drawing.

ENGLAND.

Some twenty years ago the English people became aroused to the fact that the great majority of children who leave school to go to work between the ages of twelve and sixteen years enter casual or unskilled employment, and join the ranks of the poorly-paid day-laborer from which few can rise. For, in England,

PLATE III



Design based on a butterfly motive. A practice piece from the Trade School for Girls, Rotterdam.

although the law requires a child to attend a day school until his fourteenth birthday, still if in the opinion of the proper authorities there is good and sufficient reason for his going to work earlier he may do so. Under this latter provision of the English law children may and in some sections do go into the factories as young as eleven years of age, although not in great numbers.

Stimulated by a strong philanthropic sentiment, the London County Council, which controls the schools of London, began to establish higher elementary schools which are central schools fed from the lower schools. Children are admitted to the higher schools at the age of twelve who if they remained in the lower schools until they were fourteen years old would then enter the trades or casual or unskilled employment. The central schools provide a four years' course, and their aim is to keep children in school until they are sixteen years old, and in the meantime fit them to enter the trades or trade schools of which there are a few of recent origin in London. The central schools are in no sense trade schools since shopwork occupies only two hours and a half a week, but for the last six years they have taken a steadily increasing bias toward the trades, and every subject is now taught with reference to its bearing upon the trades; e. g. trade arithmetic, commercial geography, mechanical drawing.

Since the philanthropic motive is so strong in England, it is not surprising that instruction for the trades should have been introduced early in the schools for

THE ENGLISH MOTIVE

cripples and homeless children. A description of one school for homeless children, the East London Industrial School at Lewisham, may help us to understand the English motive. The boys entered at Lewisham are waifs picked up in the streets of London by the police or by individuals who report them to the police. They may be homeless or orphans or from bad homes. They are not bad boys, for such are sent to the reform schools, but they are those who are sure to drift into a bad life if uncared for. There are about one hundred and fifty boys in the school, all boarders, who sleep in wards; they are constantly under supervision, even when dressing in the morning and playing in the playground. They are never allowed to play in the streets or to leave the premises except to do certain specified kinds of work like delivering goods.

They are taken from the age of six years and up, and may by law be kept in school until they are sixteen. Some are put out as young as fourteen, but not many. If a boy misbehaves after he has been placed, he may be brought back and kept in school again for as long as three months. The knowledge of this serves as a check. About thirty boys are placed every year, averaging five a year in the army, ten upon farms in Wales, and the others in special skilled trades. When a boy is ready to be put out, a report is made to the London County Council with a recommendation as to a trade for him. The boy is then placed, and the particulars of his placing reported to the Council who send an officer to in-

PLATE IV



Design based on a flower motive. Bischoffsheim School, Brussels.

vestigate. A small grant is made the school when a boy under sixteen is placed to pay for occasional help given him and for the visits made upon him. The record of each boy is kept for three years after he has left the school. He earns on an average seven or eight shillings a week to begin with.

All the little boys are taught needle-work, darning, mending, and shirt-making, wood-work, and manual training. When the special trades are taken up, such as tailoring and shoemaking, half-time is given to the work of the trade and half-time to the elementary subjects taught in the school. Agriculture is taught those who are going on to farms in Wales, and the playing of band instruments to those who are going into the army. The school boasts a band of sixty boys. The personal supervision given the boys and the kindly interest taken in the career of each member of it has made this school a true and beloved alma mater, continually visited by its graduates particularly upon holidays.

As the London County Council is interested in and supervising and endorsing the philanthropic work done in the schools for homeless boys, so in various other places in England and Scotland the local school officials are actively engaged in what is distinctively philanthropic work.

In the report of this work published in 1909 by the Consultative Committee on Attendance, Compulsory or Otherwise at Continuation Schools, the following introductory remark is made:

THE ENGLISH MOTIVE

“ A great defect in our social system is the absence of any plan whereby lads leaving the elementary schools, perhaps with good character and good ability, can be diverted into the paths of permanent employment, skilled or unskilled.”

From this report we give here the efforts being made in three cities to remedy this defect. The work is partly in the nature of propaganda for the trade schools and partly employment agency work.

At Halifax, England, a city of 107,000 inhabitants in 1900, the chief attendance officer forwards every Saturday morning to the organizer of the evening trade schools a list of the scholars who have left the day schools during the current week. On the following Monday morning, one of the clerks from the office visits the home of each boy and points out to the parent the advantages of attending the evening school. If the parent gives an unfavorable reply, the clerk sees the boy himself. One clerk does all the work.

At Finchley, a near suburb of London, a letter is sent by the headmaster of each school to the parents of every child near its thirteenth birthday, inquiring what is proposed in regard to the child's career and offering to assist them in finding a suitable occupation for him or her. As a result of the interview arising from this letter, the headmaster fills up a form which reaches the Secretary of the Education Committee at the time when the child is thirteen years and nine months old, so that the Education Committee has at least three months in which to

PLATE V



Design based on a spider and flower motive. Bischoffsheim School,
Brussels.

find a suitable occupation for the candidate. At the local Education Office, a register is kept in which are entered the details sent in by the headmasters together with the particulars of the post where the boy or girl is subsequently employed and the conditions of such employment.

In Edinburgh, the School Board has adopted a scheme for the establishment of an educational information and employment bureau under charge of a standing committee of seven members of the School Board. There will be associated with it an advisory council, consisting of the other members of the School Board and of such representatives of public bodies and trade associations as the Board may from time to time co-opt, due regard being had to securing representation of the principal trades and of women's occupations.

In the city of London, the same kind of work has been begun by a large philanthropic association called the Apprenticeship and Skilled Employment Association. This association has organized twenty local committees in as many districts in the city and about ten committees for the provinces of England, and hopes eventually to have a committee for each district in London. The committees consist of from ten members up, some with paid secretaries since it is difficult to get good voluntary workers. Each committee gets in touch with the children of its own district who are leaving school at the age of fourteen, and tries by a method of persuasion with the parents to have the boys apprenticed in skilled

THE AMERICAN SITUATION

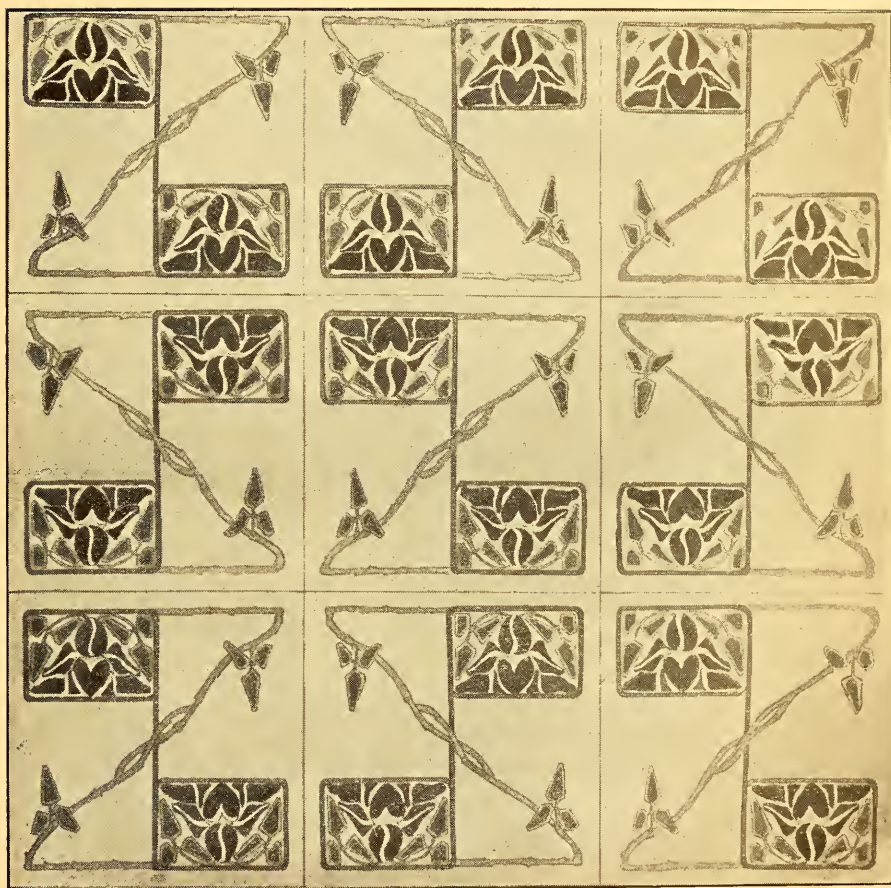
trades, such as tailoring, even though it is recognized that they get lower wages for some time than in some unskilled occupations like the messenger service. The committee makes a study of these boys and girls to find for what trade each is fit, visits the employers in the neighborhood, secures places for the children, and then urges them to go to the evening trade schools.

In the case of girls, the trade schools and schools of housekeeping are kept entirely separate in London. In the elementary schools sewing is a required subject from the primary grades up, and cooking is taught to all girls at the age of thirteen. It is very difficult to get positions for girls in certain trades in which they might excel because of the opposition of the trades-unions to the competition of women, and therefore instruction in these trades is not offered girls as yet.

THE AMERICAN SITUATION.

On returning to American soil, one feels with fresh force the difficult educational problems that are to be solved here, and the peculiarly practical, democratic, and optimistic spirit with which we are rising to meet them. We have been slow to recognize them, and the general public does not as yet understand them, but we are beginning to grapple with them. We have a few recent experiments in the upper grammar grades of our public schools in cities like Boston, New York, and Philadelphia; we have some factory apprenticeship schools like the one conducted on a large scale by the General

PLATE VI



Design based on a flower motive. Bischoffsheim School, Brussels.

THE AMERICAN SITUATION

Electric Company of West Lynn, Mass.; we have corporation schools for apprentices established by the New York Central Railroad; we have some half-time work and study schools like the Fitchburg and Beverly schools in Massachusetts; we have philanthropic schools like the School of Salesmanship in Boston and the Waterbury Institute of Craft and Industry in Connecticut; and latest of all there is announced a technical training school for hotel help to be established in Indianapolis as a branch of the National Trades School and Technical Institute, to be maintained by the International Hotel Stewards Association. We have some well-organized and well-equipped schools that have passed the experimental stage like the Hebrew Technical Institute for Boys, the Manhattan Trade School for Girls, the New York Trade School for men and boys, Pratt Institute, Drexel Institute, Simmons College. Some of our universities are alive to the urgency of the call for a training that shall enable young men to deal with modern industrial questions in an altruistic spirit and with some comprehension of their meaning, and young women to bring to the vexed but vital problems of home life an enlightened intelligence, and these universities are establishing departments of industrial education and domestic science like Chicago University.

Our problems are our own. We are not much troubled by the conflict of church and state in educational affairs as some European countries are. We are not at all vexed by the question of the language of in-

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struction like Germany in Poland. But our schools are sometimes greatly hampered by the invasion of non-English-speaking foreign-born children into every grade at every age, reluctant pupils who do not fit into our system, and we face a second even more difficult situation in that whatever type of school we organize for children, we must not eliminate for any child of any parentage at any stage in his education before he is fourteen years old the possibility of advancing not onwards but upwards into the higher pursuits if he will. It is this second situation which makes the question of industrial training in our grammar schools so troublesome.

In the so-called Eliot School in Jamaica Plain, Boston, an experiment is now in its third year which aims to meet this second situation. From the neighboring Agassiz Grammar School, an industrial class is formed every year of boys from ten to thirteen years of age, mostly from the sixth grade, who must spend five hours a week upon handwork and at the same time are not excused from any of the regular work of the Agassiz School. An hour and a half of the time is given up to drawing. Articles in heavy paste-board and wood used by the thousand in the city schools, such as cloth-covered pasteboard pencil boxes and wooden bench stops, are furnished the schools from this workshop, and special orders are filled when the demand comes, for catalogue boxes for example, mineral drawers, etc. The room is equipped with an outfit of carpenters' benches, a circular saw, and various labor-saving devices.

PLATE VII



Design based on a thistle motive. Bischoffsheim School, Brussels.

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The school numbers now 132 in three classes, and the experiment has been long enough continued to arrive at some conclusions as to its success. Three proven results are noteworthy: the boys in the industrial class cover just as much ground in their studies as the boys not in the industrial class, and do it in less time per week; the number of failures to win promotion is smaller than the average; and fewer boys from this class have left school at the age of fourteen than would be expected. In general it may be claimed that the handwork has had a stimulating effect upon the mental processes, and has given the boys a better idea of the value of book-learning.

The product is always designed for use, and is of a more practical nature than that made in the ordinary manual training school. In this particular it differs also from what is produced in the schools of the fourth grade in Belgium, in which the articles made are mainly practice pieces and are exceedingly simple.

It is sometimes maintained that it would be impossible for us to introduce into our educational system the German continuation school, yet such an experiment is being tried this year in Boston. The obstacle in the way of its success is the first of the two difficult situations mentioned above which we face. Since children in the German schools are practically all native-born, every boy who enters a continuation school may be said to have had eight years of schooling by the time he is fourteen years old, whereas with us many foreign-born children cannot read and write English at the age of

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fourteen. A continuation school, therefore, which made a knowledge of arithmetic through fractions a requirement for admission would exist in the main for older boys and would only partially help in the solution of our problem. As an illustration of this we may cite the co-operative Y. M. C. A. and factory school of Bridgeport, which provides two hours of instruction a week in the day-time at company expense in mathematics, drawing, and a little elementary science to boys selected by the employers who are interested. The school grew in the first four months to number forty-four pupils not one of whom was under sixteen years.

As a second illustration, we may cite the Union School of Salesmanship in Boston, a co-operative continuation school for salesgirls from five large mercantile houses who contribute to its support and whose employees receive instruction five hours a day five days in the week in company time. To enter this continuation school, pupils must be at least eighteen years of age.

The Connecticut legislature in the session of 1909 made the educational requirements for children between fourteen and sixteen years of age who leave school to go to work the ability to read fluently and write legibly in English or their native tongue and a knowledge of arithmetic through fractions. In order to establish the very desirable German continuation school in our state, it would probably be necessary to require a knowledge of reading and writing in the English language without the alternative of such knowledge in their native tongue.

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With the assumption of this requirement as a near possibility, the following recommendations are made to the members of the League as a result of the brief investigation which we have been summarizing:

I. that we advocate the introduction into our grammar schools in every town of 20,000 inhabitants or over in Connecticut industrial courses of five hours a week open to all children from the sixth grade up, and as far as practicable in smaller towns also.

II. that we advocate the establishment by the State of day trade schools in every town of 20,000 inhabitants or over for children over fourteen years of age who can pass an examination in the reading and writing of English and in arithmetic through fractions.

III. that these schools be open in the evening to all workmen over sixteen years of age.

IV. that special courses from six to ten hours a week be obligatory upon all children from fourteen to eighteen years of age who have left school to go to work, and that they be given in company time with no deduction from their wages.

The question, of course, arises whether an industrial course in our upper grammar grades should be made elective or obligatory. For an answer to this question, we may refer to the plan adopted by the Agassiz School: that the five-hour-a-week apprenticeship work be offered as an elective, and two hours a week of manual training be obligatory upon all not electing the workshop course. When, however, the apprenticeship instruction has passed

the experimental stage, if it becomes certain that it stimulates the children to do better school work in a shorter amount of time and if its popularity grows, it seems likely that the demand for it will become general and that it will in time supersede the manual training for all pupils.

If we are really thinking of real people with real wants to be satisfied, we cannot fail to see how varied these needs are: there is need in our greater cities of a one-year trade school for those girls and boys upon whom the pressure is almost irresistible to earn even a small weekly wage; there is a large place for two-year trade schools, particularly in cities the size of Bridgeport and New Britain in which two such state trade schools have just been organized; there is a large number of boys and girls in all cities who must enter wage-earning occupations, commercial or industrial, early and yet are not under immediate pressure so to do, who can afford several years in which to fit themselves for a high grade of work in any given vocation; and there is a demand for diversified secondary schools which may be preparatory for the higher schools of technology and the colleges, or may furnish the sum total of culture desired. It is to be noted that in the Saxon scheme the claims of all these classes are definitely met.

In response to these various demands, all kinds of such schools are already being organized in American cities scattered over a wide territory, but no general scheme of education has yet been evolved to include them

all. An interesting plan for New York State has been worked out by Dr. Andrew S. Draper, Commissioner of Education, which provides for an elementary school of six grades and differentiated secondary schools beginning thereafter. A child of twelve years, at which age he is supposed to have completed the sixth grade, is too young to have a bent toward any kind of a vocation, and the question may be raised in regard to Dr. Draper's scheme whether vocational direction at this point does not assume too much responsibility.

Whatever system of industrial education it is that we are little by little developing in the United States, it is so far of a most practical kind. In our girls' schools we are not teaching perfect sewing upon practice samplers — many are the tears that are shed upon these same beautifully worked samplers we are told — but the child is put at once upon the making of articles for daily use, her sewing apron and workbag, and learns by making a series of garments not exquisite workmanship, but how to sew well enough in a short course to get and keep a place in a dressmaker's shop. Our boys are taught for example that perfect finish is to be given a tool only when it brings a higher price in the market. At the same time all our schools are aiming to produce a higher grade of work than is put on the market by the manufacturers of cheap commodities.

Another characteristic of our industrial work outside of the grammar grades and the manual training departments seems to be a tendency to produce even in practice

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work what is of real value, not diminutive garments and miniature chairs and bureaus, but garments to be worn, book-cases to be used. This is more interesting and more stimulating.

Our love of what is stimulating may be given another illustration from a comparison of the rare collection of art objects at Drexel Institute with the beautiful and much more extensive and comprehensive collection in the Zeichnungsschule in Dresden. The German collection, one must suppose, is of greater value to the instructor as illustrative material for lectures on the history and character of every kind of art from pottery and sculpture to textile fabrics, but the Drexel collection is unique, excites the admiration, catches and chains the attention as the other does not. As the old-fashioned New Englander might say "We admire to be interested."

Whatever may be said for or against our methods, one thing is plain to the most superficial observer who has reached the age at which he has a backward perspective that appreciation of the beautiful in the fine arts has received a great impetus from somewhere in the last quarter of a century. Taste in architecture is more general, book illustrations are of a far higher order, house decoration is simpler and more tasteful in the homes of culture.

Indeed, we beg leave to close this very hasty and inadequate glance over a subject rich with suggestions with the simple proposition that we are not dreamy thinkers in the United States, we are trying to think with a pur-

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pose, to focus our thoughts upon some near and real result, and we advance with an optimism which is not crude but born of real opportunity.

MARY CROWELL WELLES,
General Secretary of the Consumers'
League of Connecticut.

Newington, Ct.

February, 1911.

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The following Exhibit is in the possession of the
League :

- I. From De Industrieschool voor Meisjes, Rotterdam,
 - (a) Ten articles to illustrate the teaching of lingerie by requiring the pupils to make diminutive garments.
 - (b) Four samplers to illustrate the teaching of fine darning and re-knitting.
 - (c) One sampler to illustrate the teaching of tailoring.
 - (d) Four large practice pieces in colors to illustrate early lessons in the teaching of designing from nature motives.
- II. From L'École Professionnelle Funck, Brussels,
Nine articles to illustrate the teaching of lingerie by requiring the pupils to practise sewing and embroidery stitches, buttonholing, tucking, etc., upon samplers.
- III. From L'École Bischoffsheim, Brussels,
 - (a) Six photographs to illustrate advanced work in designing from nature motives.
 - (b) Flowers and materials to illustrate artificial-flower making.
- IV. From L'École Professionnelle et Ménagère, Ave. de la Toison d'Or, Brussels,
 - (a) One sampler to illustrate the first month's work of the first year in lingerie.
 - (b) One sampler to illustrate the first month's work of the second year in dressmaking.
- V. From L'École Professionnelle pour Jeunes Filles, Antwerp,
One sampler to illustrate the teaching of drawn work and embroidery stitches in silk.

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- VI. From the public grammar school, Morlanwelz,
Seven samplers to illustrate the teaching of stitches in
the elementary grades.
- VII. From Die Handels- und Gewerbeschule, Potsdam,
 - (a) Four samplers to illustrate patching and seaming.
 - (b) One piece of art work.
- VIII. From the Waterbury Institute of Craft and Industry,
Eleven pieces to illustrate the first twelve lessons in
pillow lace-making.
- IX. An exhibit is promised from the State Trade School, Bridgeport.

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The Schools visited by the Investigator of the League.

HOLLAND.

De Nieuwe Huishoudschool	Amsterdam
De Dagteeken en Kunstambachtschool	"
De Industrieschool voor Meisjes	"
De Ambachtschool	"
De School Quellinus	"
De Industrieschool voor Meisjes	Rotterdam

BELGIUM.

École Industrielle	Antwerp
École Professionnelle pour Jeunes Filles	"
Institut du Sacré-Coeur de l'Immaculée Conception	Heverlé
École Bischoffsheim	Brussels
École Professionnelle de Tailleurs	"
École Professionnelle de Mécanique de Précision d'Horlogerie et d'Electricité	"
Institut Jean Bethune	"
École de Typographie	"
École de Tappissiers-Garnisseurs	"
École de Reliure et de Dorure	"
École Couvreur, Professionnelle et Ménagère	"
École Professionnelle pour Jeunes Filles Rue du Président	"
École Professionnelle pour Jeunes Filles (Rue du Poinçon)	"
École Professionnelle et Ménagère	"
École Primaire Supérieure Technique	"
" " " " (filles)	"
College Saint-Louis	Liège
École Professionnelle de Mécanique	"
École Professionnelle d'Armurerie et de Petite Mécanique	"

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École Industrielle et Commerciale	Ghent
École Professionnelle des Metaux	"
École Professionnelle du Batiment	"
École Industrielle et Professionnelle	Morlanwelz
École pour Jeunes Filles	"
École Supérieure des Textiles	Verviers
École Professionnelle, Industrielle, Supérieure	Charleroi

GERMANY.

Kunstgewerbe- und Handwerkerschule	Cologne
Victoria-Fortbildungs-Schule	Berlin
Handels- und Gewerbeschule	Potsdam
Obligat Gewerbliche Fortbildungsschule	Charlottenberg
Bürgerschule	Dresden
Städtische Gewerbeschule	"
Städtische Gewerbeschule (Schülerinnen-Abteilung)	"
Gewerbliche Fach- und Fortbildungsschule	
Fleischer-Innung	"
Buchdruckereibesitzer-Innung	"
Konditoren-Kreis-Innung	"
Schornsteinfeger-Kreis-Innung	"
des Vereins Dresdner Gastwirte	"
Tapezierer-Innung	"
Zeichnungsschule	"
Königliche Akademie für Graphische Künste und Buchgewerbe	Leipsic
Carola-Schule	"
Städtische Gewerbeschule und Maschinenbauschule	"
Frauenarbeitschule und Arbeitslehrerinnen-Seminar	Munich
Gewerbliche Fachliche Fortbildungsschulen	"
Buchdrucker und Schriftsetzer	
Lithographen und Steindrucker	
Metallgiesser und Gürtler	

ENGLAND

Dartmouth Home for Cripples	London
East London Industrial School	"

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THE UNITED STATES

North Bennet Street Industrial School	.	.	.	Boston
Union School of Salesmanship	.	.	.	"
Sloyd Manual Training School	.	.	.	"
Trade School for Girls	.	.	.	"
Eliot School	.	.	.	"
Independent Industrial School	.	.	.	Newton
Textile School	.	.	.	New Bedford
Technical High School	.	.	.	Springfield
Manhattan Trade School for Girls	.	.	.	New York
Trade School for Boys	.	.	.	"
Hebrew Technical Institute for Boys	.	.	.	"
" " " " Girls	.	.	.	"
Pratt Institute	.	.	.	Brooklyn
Drexel Institute	.	.	.	Philadelphia
Boardman High School	.	.	.	New Haven
Institute of Craft and Industry	.	.	.	Waterbury
State Trade School	.	.	.	New Britain
State Trade School	.	.	.	Bridgeport
Co-operative Factory and Y. M. C. A. School	.	.	.	"
Sigourney School	.	.	.	Hartford
Vacation Schools	.	.	.	"
" " " " " "	.	.	.	Middletown

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